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ical Station, Vol. 3, no 58, p.54). Vicinity of Yakutat Bay, Alaska, 1892, coll. Frederick Funston, comm. U. S. National Museum. (This specimen is a much prized souvenir of our plucky little American soldier and botanist.) Juneau, Alaska, Mehner. Cape Breton Id., *No. 1432*, 1915, and also *No. 90* of 1909, G. E. Nichols.. Traille River Divide, Idaho, alt. 7,000 ft.. "On shady crevices of quartzite ledges, J. B. Leiberg, *No. 260*" White Bay, Newfoundland, 10-6-91. Sent by Dr. Best, probably collected by Waghorne.

Brachythecium Holzingeri Grout, COMB. NOV.

B. Holzingeri Grout (*B. collinum Holzingeri* Grout). BRYOLOGIST 4 :48. July, 1901.

At the time this variety was described the *collinum* group and its allies were not well enough known to warrant making a new species, but a specimen from A. H. Brinkman, Mt. Kamloops, British Columbia, on soil, alt. 3700 ft., Sept. 20, 1910, presents an extreme and well differentiated form that seems certainly worthy of specific rank. The leaves are very widely long-decurrent. The plants are loosely intricate and sparingly branched and the seta slightly papillose. I consider this form typical of the species rather than the plant originally described as *B. collinum Holzingeri*.

BRACHYTHECIUM OXYCLADON (Brid.) J. & S. forma **falcata** FORMA NOV.

A very interesting xerophytic form unlike anything I have seen before. The plants are bright yellow with short stems and branches which are more or less curved at the ends; leaves strongly falcate secund. Plants sterile.

Dry sandy shores of Douglas Lake, Michigan, June-August, 1920. G. E. Nichols. *No. 141*.

NEW DORP, RICHMOND BOROUGH, N. Y.

LITTLE JOURNEYS INTO MOSSLAND

VI. — THE MOSSES OF TREE-TRUNKS

GEORGE B. KAISER

Let us go to the woods. The student may there reap a veritable harvest of interesting mosses which grow on the trunks of living trees. In our groves and forests many trees indeed harbor a great variety of bryophytes forming a distinct moss-flora of their own and these mosses add considerably to the beauty of the scene. It would be difficult to imagine how bare an aspect the woodlands would present without them.

Those aprons of gray-green for instance. How thickly they clothe the base of the white oak and of other trees! These are likely to be composed of *Thelia asprella*, in autumn, when fertile, so thickly covered with capsules displaying conspicuous white peristomes. Under the microscope the papillae on the leaves appear delicately branched. Other mats on like substrata are yellow rather than

gray-green and the leaves have simple unbranched papillae. *Anomodon rostratus* is a bright yellow-green, the leaves are somewhat opaque, and a strand, when held to the light, exhibits under the hand lens, leaves with very slender apices. On the bases of trunks which at some seasons are submerged, one may note the more shaggy and thicker growth of *Anomodon attenuatus* and, to the North, the mat may prove by the fringed basal margin of the leaves to be *Anomodon apiculatus*.

Or, the tree-bases may be clad with *Leskeas*. *Leskea gracilescens* with slender stems, the acute leaves closely appressed when dry, is the commonest species of the genus in our region, but *Leskea obscura*, with rounded leaves, coarser in appearance, is to be found too, and, towards the North and West, the more acuminate-leaved *Leskea polycarpa*. Only rarely do we find *Leskea nervosa*, which is quite blackish in color and whose leaves have a distinctly excurrent nerve.

You will soon realize that the rather glossy olive-green or brownish *Platygyrium repens* also loves the base of trees, and you will find the species almost everywhere on such substrata, sometimes unmixed, sometimes with the glossy green *Brachythecium acuminatum* and other pleurocarpous mosses. All these bryophytes so far mentioned have straight, erect capsules, but one may find with them *Amblystegiella adnata* and other *Amblystegia* whose capsules are gracefully arcuate, presenting a quite different appearance. It is an undertaking of some magnitude to become familiar with the moss-flora of tree-bases but perseverance sees the fruits, in more ways than one, and the day comes, after careful study, when typical *Platygyrium*, *Amblystegiella*, and *Stereodon reptilis* may be differentiated by the naked eye without much trouble.

Farther up the trunk the mosses are quite different. *Pylaisia Schimperii* appears in ample mats of bright glossy green with the ends of the strands curved. The capsules, generally borne abundantly, are upright, brown in color, and the endostome of the peristome teeth is joined from tooth to tooth, forming little loops clearly seen under the microscope. If you are fortunate you may also find *Homalotheciella subcapillata*, which is paler green without curved ends, the seta of the light brown sporophyte decidedly rough, while the abruptly acuminate leaves display a costa to one-half their length.

Here appear the cushions, half-inch or more in diameter, of *Ulota crispa* and *Ulota Ludwigii*, covered with pale straw-colored capsules on short setae. The former has the leaves curled when dry, while the latter, commonly called the Puckered *Ulota*, has little tucks at the upper end of the capsule and the leaves are not crispate under any condition. With the *Ulotas* are found several common *Orthotricha*. Dr. Grout in his book tells how to determine them. *Orthotrichum strangulatum* with immersed furrowed capsules, constricted below the mouth when fully mature, chestnut-brown in color, and small, seems one of the most abundant species in our range, but several others occur: *Orthotrichum ohioense*, with pale straw-colored capsules, a little larger than the first species; *Orthotrichum speciosum*, much larger than any other species of the genus hereabouts, with more exserted capsules; and *Orthotrichum sordidum* with characteristics only evident under microscopic examination.

At five feet or more above the base of the trunk also occur the robust mats of *Leucodon brachypus*, *Leucodon sciuroides*, and *Leucodon julaceus*, according to whether the locality is north or south. The stems of these mosses are several inches in length, with hooked ends, and in alternating moisture and dryness, present very different aspects, as does the beautiful *Neckera pennata*, which grows with *Leucodon*, but is complanately flattened and paler green, shelving out from the tree-trunk in graceful curves. The capsules of these species, except *Leucodon julaceus*, are immersed. I recall a certain sunny morning after heavy rains, in a glen of the Catskill Mountains when the bolls of the venerable monarchs of the forest, resplendent in all their mossy dress of *Leucodon* and *Neckera*, have never appeared to me more beautiful.

One of the less common tree-loving mosses is *Anacamptodon splachnoides*, which was so named because the teeth of the peristome bend backward and because the species resembles that odd genus *Splachnum*. This moss is found about clefts and knotholes of living trees throughout a wide range. I have collected it in central Pennsylvania, in southern New Jersey, and in the mountains of New York, but it is never common and the search for it is generally a long but always an interesting one. In color this slender member of the *Fabronia* family is dark green, the ovate slenderly acuminate leaves have clearly marked cells and the capsules, on setae quarter-inch high, are dark brown and exhibit those characteristic backward-turning teeth. For this and for nearly all the species described, one of the best collecting grounds in my experience is a grove of old sugar maple trees at Haines' Falls, in the Catskills. There more than one summer's afternoon has been indeed well spent in carefully scrutinizing the rich old mossy trunks, and wonderful collections for future study have been brought back from this pleasant retreat, so redolent of woodsy scents and "far from the maddening crowd" which, too often, makes some of our resorts places to be avoided rather than sought by the lover of Nature.

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GRIMMIA BRANDEGEI AUST.

JOHN M. HOLZINGER

The authors of Lesquereux and James' Manual record, on page 138, that they have seen only a sterile plant of this species; and, since from the original description the fruit characters are exactly like those of *Grimmia plagiopodia*, they have referred this species to their variety *pilifera* of the Manual. It is not quite clear from the Manual whether Austin's species is the type of var. *pilifera*: if it is, then *Grimmia plagiopodia pilifera* L. & J. is a synonym for *Grimmia Brandegei* Aust.

Paris's Index accepts the view of the Manual. But Dr. Brotherus, in *Natürliche Pflanzenfamilien*, Musci, p. 449, cites Austin's species as distinct. This view is borne out by plants collected in 1921 in Los Angeles County, Cali-